

Applicant: Ping-Hsu Chen, et al.
Serial No.: 10/786,187
Filing Date: 02/25/2004
Attorney Docket No.: 67,200-1070

REMARKS

Claims 1-20 are pending herein.

Claims 1-20 are rejected.

Claims 1, 3, 6, 8, 9, 11, 14 and 16 are currently amended.

Specification

The specification was objected to as failing to provide proper antecedent basis for the claimed subject matter on the grounds that claims 3, 6, 8, 11 and 14 recite the claim limitation of the focused ion beam having a current density of "about 200-800 pA", whereas the specification states that the current density is "400-800 pA".

It will be noted that each of claims 3, 6, 8, 11 and 14 as amended recites an ion beam having "a current density of about 400-800 pA", in accordance with the same range of current density recited in the specification. Reconsideration and withdrawal of the objection to the specification is therefore respectfully solicited.

Claim Objections

Claims 1 and 9 were objected to because in line 2 of claim 1 and line 2 of claim 9, the word "layer" should be inserted after "opaque". Appropriate correction was required.

It will be noted that each of claims 1 and 9 as amended recites "opaque layer". Reconsideration and withdrawal of the objection to claims 1 and 9 is therefore respectfully solicited.

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Claim rejections under 35 U.S.C. 102

Claims 1, 9 and 16 were rejected under 35 U.S.C. 102(b) as being anticipated by Livengood et al., U.S. Pat. No. 5,952,247.

In light of the amendments to the claims, it is respectfully submitted that Livengood et al. fails to anticipate claims 1, 9 and 16 under 35 U.S.C. 102(b).

Reference is made to MPEP 2131, which states, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference". *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Livengood et al. fails to teach invention of claim 1

It is respectfully submitted that Livengood et al. fails to disclose "each and every element" as set forth in amended claim 1, since Livengood et al. fails to disclose a method comprising "...leaving at least a portion of...at least one transparent layer intact over...alignment marks", as set forth in amended claim 1.

In contrast, in col. 6, lines 25-29, Livengood, et al. states, "Once determined, a gas-assisted laser etching system is used to etch alignment holes through the bottom of chip 40 at these locations to expose the three M1 chip fiducials on top of the chip" [emphasis added].

Accordingly, it is respectfully submitted that Livengood et al. fails to disclose "each and every element" as set forth in

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amended claim 1 as required for anticipation by the Federal Circuit decision in *Verdegaal Bros. v. Union Oil Co. of California*.

It is therefore respectfully submitted that Livengood et al. fails to anticipate amended claim 1 under 35 U.S.C. 102(b). Reconsideration and allowance of amended claim 1 is therefore respectfully solicited.

Livengood et al. fails to teach invention of claim 9

It is respectfully submitted that Livengood et al. fails to disclose "each and every element" as set forth in amended claim 9, since Livengood et al. fails to disclose a method comprising "...leaving...at least one transparent layer intact over...alignment marks", as set forth in amended claim 9, for the same reason as was set forth herein above with respect to claim 1.

Accordingly, it is respectfully submitted that Livengood et al. fails to disclose "each and every element" as set forth in amended claim 9 as required for anticipation by the Federal Circuit decision in *Verdegaal Bros. v. Union Oil Co. of California*.

It is therefore respectfully submitted that Livengood et al. fails to anticipate amended claim 9 under 35 U.S.C. 102(b). Reconsideration and allowance of amended claim 9 is therefore respectfully solicited.

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Livengood et al. fails to teach invention of claim 16

It is respectfully submitted that Livengood et al. fails to disclose "each and every element" as set forth in amended claim 16, since Livengood et al. fails to disclose a method comprising "...leaving at least a portion of [a] dielectric layer intact over alignment marks; and viewing the alignment marks through [an] exposure opening and the dielectric layer", as set forth in amended claim 16.

Accordingly, it is respectfully submitted that Livengood et al. fails to disclose "each and every element" as set forth in amended claim 16 as required for anticipation by the Federal Circuit decision in *Verdegaal Bros. v. Union Oil Co. of California*.

It is therefore respectfully submitted that Livengood et al. fails to anticipate amended claim 16 under 35 U.S.C. 102(b). Reconsideration and allowance of amended claim 16 is therefore respectfully solicited.

Claim rejections under 35 U.S.C 103

Claims 2, 5, 10, 13, 17 and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Livengood, et al., U.S. Pat. No. 5,952,247 in view of Mizumura, et al., U.S. Pat. No. 5,825,035.

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In light of the amendments to the claims, it is respectfully submitted that Livengood et al. in view of Mizumura et al. fails to render claims 2, 5, 10, 13, 17 and 19 obvious within the contemplation of 35 U.S.C. 103(a), as hereinafter discussed in detail.

Livengood et al. in view of Mizumura et al. fails to teach invention of claims 2 and 5

Reference is made to MPEP 2143.03, which states, "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious". In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

It is respectfully submitted that Livengood et al. in view of Mizumura, et al. fails to teach or suggest all of the limitations of claims 2 and 5 as dependent from amended claim 1, since Livengood et al. in view of Mizumura et al. fails to teach or suggest a method comprising "providing a focused ion beam; rendering visible alignment marks by impinging said focused ion beam against at least one opaque layer leaving at least a portion of at least one transparent layer intact over the alignment marks", as set forth in amended claim 1 and defined by claims 2 and 5 as dependent therefrom, according to the Federal Circuit decision in *In re Fine*.

In contrast, Livengood et al. (col. 6, lines 25-28)

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teaches the etching of alignment holes *through* the bottom of a chip (40) to "expose the three M1 chip fiducials on top of the chip". [Emphasis added]

Therefore, it is respectfully submitted that Livengood et al. in view of Mizumura et al. fails to render claims 2 and 5, as dependent from amended claim 1, obvious under 35 U.S.C. 103(a). Reconsideration and allowance of claims 2 and 5 is therefore respectfully solicited.

Livengood et al. in view of Mizumura et al. fails to teach invention of claims 10 and 13

It is respectfully submitted that Livengood et al. in view of Mizumura, et al. fails to teach or suggest all of the limitations of claims 10 and 13 as dependent from amended claim 9, since Livengood et al. in view of Mizumura et al. fails to teach or suggest a method comprising "providing a focused ion beam; cutting an exposure opening in...at least one opaque layer...leaving at least one transparent layer intact over the alignment marks", as set forth in amended claim 9 and defined by claims 10 and 13 as dependent therefrom, according to the Federal Circuit decision in *In re Fine*.

Therefore, it is respectfully submitted that Livengood et al. in view of Mizumura et al. fails to render claims 10 and 13,

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as dependent from amended claim 9, obvious under 35 U.S.C. 103(a). Reconsideration and allowance of claims 10 and 13 is therefore respectfully solicited.

Livengood et al. in view of Mizumura et al. fails to teach invention of claims 17 and 19

It is respectfully submitted that Livengood et al. in view of Mizumura, et al. fails to teach or suggest all of the limitations of claims 17 and 19 as dependent from amended claim 16, since Livengood et al. in view of Mizumura et al. fails to teach or suggest a method comprising "providing a focused ion beam; cutting an exposure opening in the at least one opaque layer to the dielectric layer...leaving at least a portion of the dielectric layer *intact* over the alignment marks; and viewing the alignment marks through the exposure opening and the dielectric layer", as set forth in amended claim 16 and defined by claims 17 and 19 as dependent therefrom, according to the Federal Circuit decision in *In re Fine*.

Therefore, it is respectfully submitted that Livengood et al. in view of Mizumura et al. fails to render claims 17 and 19, as dependent from amended claim 16, obvious under 35 U.S.C. 103(a). Reconsideration and allowance of claims 17 and 19 is therefore respectfully solicited.

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Claims 3, 11 and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Livengood et al., U.S. Pat. No. 5,952,247, in view of Lee et al., U.S. Pat. No. 6,251,782.

It is respectfully submitted that Livengood et al. in view of Lee et al. fails to render claims 3, 11 and 18, as dependent from amended claims 1, 9 and 16, respectively, obvious within the contemplation of 35 U.S.C. 103(a), since Livengood et al. in view of Lee et al. fails to teach or suggest cutting an exposure opening in at least one opaque layer and leaving at least a portion of a transparent dielectric layer beneath the at least one opaque layer intact over alignment marks, as generally set forth in the amended claims. Reconsideration and allowance of claims 3, 11 and 18 is therefore respectfully solicited.

Claims 4, 7, 8, 12 and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over Livengood et al., U.S. Pat. No. 5,952,247, in view of Lee et al., U.S. Pat. No. 6,251,782, as applied to claims 3 and 11 above, and further in view of Mizumura et al. (U.S. Pat. No. 5,825,035).

It is respectfully submitted that Livengood et al. in view of Lee et al. and further in view of Mizumura et al. fails to render claims 4, 7, 8, as dependent from amended claim 1, and claims 12 and 15, as dependent from amended claim 16, obvious within the contemplation of 35 U.S.C. 103(a), since Livengood et al. in view of Lee et al. and Mizumura et al. fails to teach or suggest cutting an exposure opening in at least one opaque layer

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and leaving at least a portion of a transparent dielectric layer beneath the at least one opaque layer intact over alignment marks, as generally set forth in the amended claims. Reconsideration and allowance of claims 4, 7, 8, 12 and 15 is therefore respectfully solicited.

Claims 6, 14 and 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Livengood et al., U.S. Pat. No. 5,952,247, in view of Mizumura et al., U.S. Pat. No. 5,825,035, as applied to claims 2, 13 and 19 above, and further in view of Lee et al., U.S. Pat. No. 6,251,782.


It is respectfully submitted that Livengood et al. in view of Mizumura et al. and further in view of Lee et al. fails to render claims 6, 14 and 20, as dependent from amended claims 1, 9 and 16, respectively, obvious within the contemplation of 35 U.S.C. 103(a), since Livengood et al. in view of Mizumura et al. and Lee et al. fails to teach or suggest cutting an exposure opening in at least one opaque layer and leaving at least a portion of a transparent dielectric layer beneath the at least one opaque layer intact over alignment marks, as generally set forth in the amended claims. Reconsideration and allowance of claims 6, 14 and 20 is therefore respectfully solicited.

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CONCLUSION

Every effort has been made to amend applicant's claims in order to define his invention in the scope to which it is entitled. Accordingly, reconsideration and allowance of claims 1-20 is respectfully solicited.

Respectfully submitted,



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